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10/808,444

03/25/2004

Hiroki Hiyama

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EXAMINER

WANG, KENT F

ART UNIT

PAPER NUMBER

2622

MAIL DATE

DELIVERY MODE

10/04/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/808,444

Applicant(s)

HIYAMA ET AL.

Examiner

Kent Wang

Art Unit

2622

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 7-9 is/are rejected.
- 7) ☒ Claim(s) 4-6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 09/18/2007.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Amendment***

1. The amendments, filed on 08/16/2007, have been entered and made of record. Claims 1-9 are pending.

### ***Response to Arguments***

2. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) or rejection.

### ***Information Disclosure Statement***

3. The reference listed on the disclosure statement (IDS) submitted on 09/18/2007 have being considered by the examiner (see attached PTO 1449).

### ***Drawings***

4. Figures 7-8 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required

corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

*Specification*

5. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
6. The abstract of the disclosure is objected to because the abstract did not describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details and what the improvement the invention is disclosed. Correction is required. See MPEP § 608.01(b).

*Claim Rejections - 35 USC § 102*

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
8. Claims 1-3 and 7-9 are rejected under 35 U.S.C. § 102(b) as being anticipated by Tashiro, US 2002/0190215.

Regarding claim 1, Tashiro discloses an image pickup apparatus comprising:

- a plurality of pixels (an image pickup element 100, Fig 4) each including a photoelectric converting element (photodiode PD for performing photoelectric conversion) ([0049] and [0101]);
- a plurality of capacitors (capacitor C<sub>CL</sub>) which receive signals from said plurality of pixels at first terminals ([0101]-[0103] and Fig 14);

- a plurality of clamping switches (a clamp switch M5, Fig 14) for setting a second terminal of each of said plurality of capacitors (capacitor  $C_{CL}$ ) to a predetermined electric potential ([0103]);
- a plurality of source follower circuits (source follower M7, Fig 14, [0103]);
- a plurality of first storing units (holding capacitor CH1, Fig 14) for storing signals from said second terminals of said plurality of capacitors via said plurality of source follower circuits (source follower M7) ([0103] and Fig 14);
- a plurality of second storing units (holding capacitor CH2, Fig 14) for storing the signals from said second terminals of said plurality of capacitors via said plurality of source follower circuits (source follower M7) ([0103] and Fig 14);
- a first common output line (signal output line S, Fig 14) to which the signals from said plurality of first storing units (holding capacitor CH1) are sequentially output ([0092], [0123]-[0124] and Fig 14);
- a second common output line (FPN output line N, Fig 14) to which the signals from said plurality of second storing units (holding capacitor CH2) are sequentially output ([0092], [0123]-[0124] and Fig 14); and
- a difference circuit (differential amplifier A1, Fig 11) for operating a difference between the signal from said first common output line and the signal from said second common output line (an optical signal and a noise signal from each pixel are outputted to the differential amplifier A1; [0087]).

Regarding claim 2, Tashiro discloses each of plurality of pixels includes a first amplifying element (an amplification MOS transistor M7, Fig 14) for amplifying and outputting a signal from said photoelectric converting element (photodiode PD, Fig 14) and a reset switch (reset switch M2, Fig 14) for resetting an input portion of said first amplifying element ([0102]).

Regarding claim 3, Tashiro discloses a second amplifying element (pixel amplifier 3, [0104]) for amplifying and outputting the signal from the second terminal of capacitor, and wherein the signal from the second amplifying element is transferred to first storing unit and second storing unit (M12 denotes a selection MOS transistors as selection switch for selecting the pixel amplifiers 3) ([0104]).

Regarding claim 7, Tashiro discloses a plurality of pixels (an image pickup element 100, Fig 4) are two-dimensionally arranged in a horizontal direction and a vertical direction (arranged in a two-dimensional state; [0049]),

- wherein said image pickup apparatus (image pickup element unit 112, Fig 23) further comprises an analog/digital converting circuit (A/D converter 113, Fig 23) for converting a signal output from said difference circuit into a digital signal and a correcting circuit (image processing circuit 116, Fig 23) for correcting the signal from said analog/digital converting circuit, and
- wherein said correcting circuit (image processing circuit 116, Fig 23) has one-dimensional correction data (a signal  $\phi\text{SEL1}$ ) and corrects the signals from said plurality of pixels arranged two-dimensionally (an image pickup element 100) on the basis of said one-dimensional correction data ([0153] and Fig 23).

Regarding claim 8, Tashiro discloses a correction data includes noise components, which are generated in the case of turning off said clamping switch (transfer switch M1 is turned off to change a signal  $\phi\text{SEL1}$  from the vertical shift register VSR to high level collectively for all pixels as indicated in Fig 12; [0089]).

Regarding claim 9, Tashiro discloses a correction data includes noise components which are generated in the case of turning off said second amplifying element (a signal  $\phi\text{SEL2}$  is changed to high level for each column by a signal inputted in the vertical shift register VSR, then the second amplifying element, M9 and M12, are turned on to bring the source follower circuit constituted of the load current source and the pixel amplifiers 2 and 3; [0092]).

#### *Allowable Subject Matter*

9. Claims 4, 5, and 6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### *Inquiries*

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kent Wang whose telephone number is 571-270-1703. The examiner can normally be reached on 8:00 A.M. - 5:30 PM (every other Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ngoc Yen Vu can be reached on 571-272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-270-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KW

26 September 2007



NGOC-YEN VU  
SUPERVISORY PATENT EXAMINER